

Formulas for Sums and Differences of Angles – in book: Section 12.5 p. 766

Use the sum and difference identities and your unit circle to find the exact value of each function.

1. $\cos 75^\circ$

2. $\cos 375^\circ$

3. $\sin (-165)^\circ$

4. $\sin (-105)^\circ$

5. $\sin 95^\circ \cos 55^\circ + \cos 95^\circ \sin 55^\circ$

6. $\cos 160^\circ \cos 40^\circ + \sin 160^\circ \sin 40^\circ$

7. $\sin (135^\circ + 120^\circ)$

8. $\cos 345^\circ$

If A and B are the measures of two first quadrant angles, find the exact value of each function.

9. If $\sin A = \frac{12}{13}$ and $\cos B = \frac{3}{5}$, find $\cos (A - B)$.

10. If $\cos A = \frac{12}{13}$ and $\cos B = \frac{12}{37}$, find $\sin (A - B)$.

11. If $\cos A = \frac{8}{17}$ and $\cos B = \frac{5}{13}$, find $\cos (A + B)$.

12. If $\csc A = \frac{13}{12}$ and $\sec B = \frac{5}{3}$, find $\sin (A - B)$.

Verify that each of the following is an identity.

13. $\cos (180^\circ - \theta) = -\cos \theta$

14. $\sin (360^\circ + \theta) = \sin \theta$